

**UNION  
CARBIDE**

**INTERNAL CORRESPONDENCE**

**NUCLEAR DIVISION**

POST OFFICE BOX P, OAK RIDGE, TENNESSEE 37830

To (Name) Mr. W. C. Hartman Date May 20, 1971  
Division  
Location K-303-8 Originating Dept. Chemical Analysis  
Answering letter date

Copy to Mr. J. W. Arendt  
Mr. J. C. Barton  
Dr. H. A. Bernhardt  
Mr. E. C. Evans  
Mr. N. B. Schultz  
Mr. L. A. Smith  
Mr. H. E. Trammell  
Dr. C. W. Weber  
Mr. W. J. Wilcox, Jr.  
Plant Library  
Plant Records, RC (2)  
File  
Subject Analysis of Storm Drain  
Effluents from Laboratory  
Area  
K-TL-168

**K25RC**  
NOT TO BE LOANED FROM  
PLANT RECORDS

The uranium content of the storm drain discharging from the laboratory area has recently been monitored in an attempt to determine the laboratory area contribution to the uranium content of ORGDP release point L-7 identified in report UCC-ND-162\*. A sampling location in the storm drain northeast of the dispensary (K-1003) was selected for the study. All laboratory effluents from K-1004-A, B, C, and D, combined with a portion of K-1006 effluents, pass this point. Most of the laboratory waste waters from K-1004-J and -L discharge to the sanitary drain system. The storm drain sampled in this study also carries surface run-off from a large portion of the plant area east of Avenue E.

Each sample was collected over a period of approximately 6 hours on the normal day (8 - 4 o'clock) shift. The samples were analyzed for pH and fluoride content, in addition to uranium. Sampling was conducted during dry weather and was continued after rain began to fall on the afternoon of May 6; rain continued throughout the sampling period on May 7. The following tabulation presents the data obtained:

\* Jordan, R. G., et al, UCC-ND Environmental Committee, *Radioactive Effluent Monitoring and Control, Calendar Year 1969*, Union Carbide Corporation, Nuclear Division, Oak Ridge Gaseous Diffusion Plant, Oak Ridge, Tennessee, February 12, 1971 (UCC-ND-162) OFFICIAL USE ONLY.

674


## STORM DRAIN SAMPLING N. E. OF K-1003 DISPENSARY

<u>Date Sampled</u>	<u>Fluorides, ppm</u>	<u>pH</u>	<u>Uranium, mg/liter</u>	<u>Calculated grams U/day*</u>
4-29-71	0.1	7.1	0.004	6
4-30-71	0.1	6.8	0.004	6
5-3-71	0.1	7.1	0.009	14
5-4-71	0.1	7.3	0.007	11
5-5-71	0.2	6.8	0.011	17
5-6-71	0.1	7.0	0.012	19
5-7-71	0.1	7.0	0.035	54

\* 24 hr/day basis at a flow of 248 gpm measured previously

Of significance to note in the data are the pH values (7.0) on May 6 and 7 when the flow increased due to surface runoff. Even more significant, however, is the much higher uranium concentration of the sample on May 7, when the flow was the greatest. This might be attributed to uranium contamination of the surface run-off water.

A subsequent measurement of the storm drain flow during a rainy period showed 495 gpm passing the sampling point. This flow rate, assumed to prevail on May 7, would give a calculated uranium discharge at this point of 108 grams/day. This is several-fold greater than the levels found during normal dry weather. Assuming that the dry-weather data tabulated above are typical of normal laboratory discharges, only about 2 to 6 kg of uranium per year is introduced by laboratory effluents to release point L-7. While this appears to represent only a small contribution to the total uranium release at L-7 from the holding pond, these data need confirmation by additional sampling and analysis.

  
T. Kwasnoski

TK:ib

APPROVAL FOR RELEASE

Document: # K-TL-168; Date 5/20/71;

Title/Subject ANALYSIS OF STORM DRIAN EFFLUENTS

FROM LABORATORY AREA -- T Kwasnoski

Approval for unrestricted release of this document is authorized by the Oak Ridge K-25 Site Classification and Information Control Office, Martin Marietta Energy Systems, Inc., PO Box 2003, Oak Ridge, TN 37831-7307.

Erwin Stuehl

K-25 Classification & Information Control Officer

2/1/93

Date

---

ChemRisk Repository Number: 791 Document Number: K-TL-168

Title: "Analysis of Storm Drain Effluents from Laboratory Area"

Authors: T. Kwasnoski

Abstract: The uranium content of the storm drain discharging from the laboratory area was monitored over a two day period in a attempt to determine the laboratory area contribution to the uranium content of ORGDP release point L-7. Samples were also analyzed for flourides and pH.

Reviewer: J. Lamb

Document Source or Location: K-25 ATL

Date Document Issued: 05/20/71

Classification Category: unc

Site Document Addresses: K

Primary Document Category: sw

Date Entered: 02/05/93

Entered By: cmv

Keywords: Drainage, Release, Waterborne effluents, Storm drain  
yes, we have a copy.

---